

**Remarks/Arguments:**

Applicants wish to thank Primary Examiner Bernard Dentz for the courteous consideration rendered their representative of record during a telephone conference on or about June 24, 2008. During the telephone conference the instant office action and response thereto were discussed, including applicants' proposal to provide a Rule 132 declaration, which is provided herewith (discussed below).

The specification is amended by replacing text inadvertently printed in Greek with the text in English.

Claims 1-3, 5, 7, 8, and 14-21 are pending.

Claims 4, 6, and 9-13 are canceled, without prejudice or disclaimer.

New claims 17-21 contain subject matter carved out of original claim 8.

The rejection of claims 11-13 under 35 USC §112, as being "use claims" is rendered moot by cancellation of the rejected claims, hereby.

Claims 1-16 were rejected under 35 USC 102(b) as being alleged anticipated by USP 5,276,168 (Atwal). Reconsideration is requested.

According to the statement of rejection (Office Action, page 2) Atwal, columns 1-5, provides the generic description of a compound allegedly including "the instant 4-aryl-ureido or 4-aryl-thioureido-3,4-dihydrobenzopyrans" and "that aryl includes ...1- and 2-naphthyl and the mono-substituted phenyl where the substituent is selected from nitro, halo, CF<sub>3</sub>, alkyl, cyano or methoxy." The aforesaid "aryl" apparently refers to the variable substituent "R<sub>7</sub>" of the generic

formula (I) recited in the present claims. Assuming, arguendo, the aforesaid allegations are correct, this fails to establish lack of novelty.

For anticipation under § 102 to exist, each and every claim limitation, as arranged in the claim, must be found in a single prior art reference. *Jamesbury Corp. v. Litton Industrial Products, Inc.*, 225 USPQ 253 (Fed. Cir. 1985). A reference that discloses "substantially the same invention" is not an anticipation. *Jamesbury Corp.* To anticipate the claim, each claim limitation must "*identically appear*" in the reference disclosure. *Gechter v. Davidson*, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997) (*emphasis added*). To be novelty defeating, a reference must put the public in possession of the identical invention claimed. *In re Donahue*, 226 USPQ 619 (Fed. Cir. 1985).

The description of a large genus, by itself, cannot support a rejection under §102 for anticipation of a species within the genus. *In re Kalm*, 154 USPQ 10 (CCPA 1967). *In re Ruschig*, 145 USPQ 274 (CCPA 1965). *In re Schaumann*, 197 USPQ 5 (CCPA 1978). *In re Petering*, 133 USPQ 275 (CCPA 1962). In determining the novelty of a sub-genus over a genus, "From the standpoint of patent law, a compound and all of its properties are inseparable." *In re Papesch*, 137 USPQ 43, 51 (CCPA 1963).

In the compound genus described by Atwal there are no fewer than 10 variables, i.e., R<sub>1</sub>-R<sub>7</sub>, A, X, and Y. There are only 8 variables—R<sub>1</sub>-R<sub>7</sub> and D—in the presently claimed compound.

Notably, moreover, the presently claimed compound is unsubstituted at the 3-position of the benzopyran ring. According to Atwal (column 1, lines 45-50), the 3-position—represented by

the substituent variable "R<sub>2</sub>"—is either unsubstituted, hydroxy-substituted, or substituted by -OC(O)H<sub>3</sub>. Of the 24 exemplified invention compounds in Atwal, 23 are hydroxy-substituted at the 3-position. Only one of Atwal's exemplified compounds—Example 20—is unsubstituted at the 3-position; and, this compound is excluded from the scope of the presently claimed compound, i.e., by the proviso-containing limitation "R<sub>7</sub> is phenyl mono- or polysubstituted by R<sub>1</sub> with the exception of R<sub>7</sub> representing C<sub>6</sub>H<sub>5</sub>" (*emphasis added*) in present (original) claim 1.

The presently claimed compound—carrying no OH group at the 3-position of the benzopyran ring and bearing a *meta*- or *para*-substituted arylurea or arylthiourea group at the 4-position—is surprisingly and unexpectedly active on pancreatic endocrine tissue; e.g., Atwal teaches only anti-ischemic effects for his disclosed compounds. Moreover, 3-hydroxy-substituted arylureas/arylthioureas—such as preferentially described by Atwal—exhibit little, if any, activity on pancreatic islets, compared with the presently claimed compounds, as evidenced by the Rule 132 declaration by co-inventors Bernard Pirotte and Philippe Lebrun submitted herewith.

As set forth in the Declaration, a benzopyran derivative of the invention—unsubstituted at the 3-position—"Compound A") and the corresponding 3-OH substituted benzopyran derivative ("Compound B") were synthesized and tested for their effects on insulin secretion from rat pancreatic islets. As stated in the Rule 132 Declaration (page 4):

Compound A provoked a 40% inhibition of the insulin release while Compound B was inactive.

Based on the aforesaid test results, the inventor-declarants—Professor Bernard Pirotte and Professor Philippe Lebrun, experts in the field of the presently claimed invention—formed the following conclusion.

Comparing the residual insulin secretion for both Compound A and Compound B, Compound B was surprisingly and unexpectedly inactive. The absence of the OH group at the 3-position, therefore, surprisingly and unexpectedly results in an improvement of activity on the pancreatic tissue. This pancreatic activity is totally different from the cardiovascular, antiischemic, and anti-arrhythmic activities disclosed in Atwal.


These findings are surprising and unexpected with respect to Atwal, i.e., the skilled artisan would not have expected these results, based on the teachings of Atwal. The properties exhibited by a claimed invention must be taken into consideration when comparing the claims against the prior art, whether or not the properties are recited in the claims. *In re Estes*, 164 USPQ 519 (CCPA). *See Papesch*, 137 USPQ at 51. When a synergistic effect represents a property of a claimed invention, this is sufficient to demonstrate patentability. *In re Corkill*, 226 USPQ 1005 (Fed. Cir. 1985).

For the foregoing reasons, the rejection of claims as allegedly anticipated under §102(b) by Atwal is overcome. Withdrawal of the rejection appears to be in order.

Favorable action is requested.

Respectfully submitted,

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